



## **Socio – economic Factors Influencing Utilization of Healthcare Services in Sokoto, North-Western Nigeria**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author RAO designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors MOO and AUK managed the analyses of the study. Author GJG managed the literature searches. All authors read and approved the final manuscript.*

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### **ABSTRACT**

The objective of equity in health care system is “equal access for equal needs” and there should be no barriers to healthcare utilization. The objective of the study was to assess the socio – economic factors influencing utilization of healthcare services in Sokoto, Northern Nigeria. A descriptive cross – sectional study among 360 randomly selected (using multi – stage sampling technique) household heads in Sokoto, Nigeria was conducted in August 2015. Informed consent was obtained and information was collected using a pre – tested semi – structured interviewer administered questionnaire. Data was cleaned, manually entered and analysed using SPSS statistics version 22. Most of the households 221 (61.4%) belonged to upper social class (class I – III) and 139 (38.6%) belonged to lower social class (class IV – V). Majority of the households 337 (93.6%) paid for their healthcare through user – fees out – of – pocket payment (OOPP). About half of those that were ill suffered from Malaria and PMDs were the most visited for healthcare. Social

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class, user – fees and educational status were the three predictors of utilization of healthcare services at the health facilities as households in the lower social class were 2 times the odds to find it difficult in paying for the services utilized at the health facilities (OR = 2.20, p = 0.003, 95% CI [1.31 – 3.77]). Similarly, households that paid for healthcare with user – fees were 8 times the odds to find it difficult in paying for the services utilized at the health facility (OR = 8.02, p = 0.045, 95% CI [1.05 – 61.17]) and households with informal education were 2 times the odds to find it difficult in paying for the services utilized at the health facility (OR = 2.23, p = 0.008, 95% CI [1.24 – 4.16]). Free healthcare services, increased coverage of pre – payment options (NHIS, CBHIS), regulations of PMDs and creation of more job opportunities to address unemployment thereby upholding the social class of the citizens of Nigeria were suggested.

*Keywords: Socio – economic factors; user – fees out – of – pocket payment; healthcare utilization; Sokoto.*

## 1. INTRODUCTION

There is an increased awareness of the inequality in access and utilization of healthcare services [1] and this has renewed the government's commitment to improve the health status of the poor [2]. Most international organizations like WHO and World bank, crave to improve the health outcomes in the poor [3-5] which has resulted in an increased tendency to define their goals in terms of poverty reduction [3,4] and in a broader interpretation of what poverty really means [6,7].

Good utilization of health services serves to improve the health status of the entire population of a community and country at large. Studies have shown that the presence of health facilities alone is not enough to guarantee their use as other socio-economic factors could influence access and thus utilization. Low health facility utilization is often a reflection of poor quality of services and poor attitude of staff [8-11]. Poor quality of healthcare services as perceived by the patients may be due to inadequate number of healthcare providers, prolonged waiting time at the health facilities, high out-of-pocket payment and poor attitude of the staff either due to their negligence or lack of empathy.

Financial accessibility is one underlying phenomenon influencing choices of health utilization in the Nigeria [12]. Rich households are more likely to utilize modern hospital facilities for healthcare as compared to poor households who are likely to use herbal medicines and self-medication by visiting PMDs [12,13]. It is arguably true that socio-economic condition affects health related quality of life and utilization of healthcare services [14]. Studies have identified income and production resources as good predictors of quality health [15,16]. People

living on low incomes and the poor have been identified as standing higher risk of suffering from serious illness and death and are more likely to utilize healthcare services than those in upper income brackets, who has reasonably high savings. However, if they have to pay through out – of – pocket to utilize the needed healthcare, they stand the risk of being marginalized.

Age, gender differences, educational status and income level have been identified in some studies to determine frequency of use and comprehensiveness of healthcare packages [17-20]. Identification of such factors and community healthcare priorities vary from community to community and is usually an important step in designing interventions tailored to community needs [21] to increase utilization of healthcare services.

A study done in a rural community in Plateau State, Nigeria among 360 mothers revealed that high cost of drugs (29.0%), service charges (19.0%), easy access to traditional healers (39.0%) and difficulty in getting transport to a health facility (30.0%) were the major factors that caused non-attendance at the health facility [10]. Another cross-sectional household survey assessing the utilization of primary health care (PHC) facilities in a rural community in southwest Nigeria showed that 40.0% of respondents who were ill in the preceding six months visited a PHC facility for treatment, while others relied on self-medication. Education was positively associated with utilization of PHC services [8].

A behaviour model of health services use has frequently been used to guide multivariate analyses of health care visits [22]. The model considered hospital visits, particularly, those initiated by the individual, to be a consequence of predisposing, enabling, and need variables. In

this model, 'predisposing' refers to demographic factors such as social status, education, and beliefs; 'enabling' is the ability of an individual to secure services through income, health insurance, and community factors such as availability of health care services; and 'need' refers to the perceived illness or health status. The model is mainly used to test the impact of factors, other than 'need for care', on the utilization of health care services [22].

A socio-economic gradient in health, whereby wealthier, more highly educated persons experience better health than poorer, less educated persons, have been well reported across and within many countries [23]. A study done in Ebonyi and Enugu in 2010 showed that as SES increases (from lower to upper social class), households used more of own money to pay for health care. Also, as SES quartile decreased (from upper to lower social class), the households sold their assets to pay for healthcare [24]. Another study later done in Anambra state in 2013 revealed that as SES quintiles increases, there was an increase in outpatient department expenditure in public hospitals suggesting an income effect since the poorer quintiles were constrained by their budgetary limits to spend less on healthcare and also possibly travel shorter distances or use less comfortable but cheaper means of transportation to visit healthcare providers [25]. Studies in Tajikistan showed that healthcare utilization differed across SES groups according to ability to pay and showed that Out – of – pocket spending on healthcare (OOPS) prevented poor people from seeking care and prevented those that did from receiving appropriate care [26,27].

Out-of-pocket spending (OOPS) on healthcare are formal charges levied or payments made at the point of use for any aspect of healthcare services, and they may be charged as consultation fees, fees for drugs and medical supplies or charges for any health service rendered, such as outpatient or inpatient care [28,29]. Payment for healthcare services in the form of out-of-pocket user charges, are likely to present a barrier to access and utilization of quality healthcare services.

This study was conducted to assess the Socio – economic factors influencing Utilization of healthcare services in Sokoto state, Nigeria. It assessed the effects of socio – economic factors on the difficulties in paying for healthcare

services utilized in Sokoto, north-western Nigeria.

## 1.1 Nigerian Health Care System and Financing

Health care delivery in Nigeria is provided by the government with a major input from the private sector which include private individuals, corporate bodies and churches that own and run organisations offering health care to the public. The government of Nigeria is divided into the federal, state and local governments with each of the three levels responsible for the funding and running of the three tiers of the health sector namely the tertiary, secondary and primary health centres respectively (other healthcare providers are namely – private facilities, traditional care and Patent Medicine Dealers or vendors). The federal government through the Ministry of Health provides the overall policy guidelines and oversight functions for all arms of the health sector. The funding provided by each arm of the government is usually supplemented by money raised from OOPS from the public to make up for the short-fall [30].

There are striking inequities in use of the different providers, with the rural dwellers and poorer SES groups (which is more prevalent in the north-western Nigeria where almost half of the population there are in their lowest wealth quintiles) more likely to use low-level and informal providers, where treatment is usually of questionable quality [31-33]. These low-level providers include the PMDs (or Patent Medicine Vendors), herbalists, the health posts, and other drug sellers. PMDs or PMVs are mainly chemists stores where drugs are dispensed over the counter to patients. Patent Medicine Dealers (PMDs) followed by private hospitals and pharmacy shops are the most commonly used healthcare providers in Nigeria and north-western region in particular [34,35].

A National Health Insurance Scheme (NHIS) was launched in Nigeria in 2005 to ensure adequate financial risk protection for the masses and to cushion the huge financial burden of health care cost borne by the government. NHIS is financed mainly from taxes, premiums and grants from the government as well as aid from non-governmental organisations and international and donor agencies [11]. Recent evidence shows that NHIS covers less than 5% of the population most of whom are federal civil servants, while other health insurance schemes like private

health insurance (PHIS) and community-based health insurance (CBHI) cover less than 1% of the population [36].

In the north-western Nigeria, most insurance coverage is employee based (NHIS) which account for only paltry 0.5%; CBHIS accounts for 0.1% and PHIS accounts for none signifying that about 99.4% of people in this region had no health insurance coverage [33] and have to pay for their healthcare through out – of – pocket payment if they need to utilize healthcare facility.

## 2. MATERIALS AND METHODS

This cross-sectional descriptive community – based study was carried out among Household heads in Sokoto, Sokoto State, North Western Nigeria, in August 2015. A multi – stage sampling technique was used to select household heads for the study. It involved five (5) stages namely – selection of local government areas; selection of wards; selection of settlements; selection of houses and selection of households. The participants were recruited from six settlements – Awala and Gidadawa from Wurno LGA; Rungi and Buide from Dange – shuni LGA; Arkilla Federal low – cost and intermediate quarters from Wamakko LGA.

Advocacy visit was paid to the Ministry of Local government area affairs, the chairman of selected LGA and traditional leader of each settlement selected where permission to carry out the study was granted. Informed consent was obtained from every respondent. Ethical approval was obtained from the Sokoto state ethical committee.

The sample size was estimated at 323 and adjusted to 360 using the statistical formula for calculating the sample size for descriptive studies [37], prevalence of user fees Out – of – pocket payment (OOPS) from previous study [38] of 70%, precision of 5% and an anticipated response rate of 90%. All the men (household heads) or in their absence, their wives and if single, male or female occupants who were 18 years and above and consented to participate in the study were eligible and recruited.

A set of pre-tested, semi-structured, interviewer administered questionnaire was used to obtain information on respondent's socio-demographic characteristics, pattern of payment for healthcare services and utilization (difficulty in payment) of healthcare services. Information were also

obtained on the most common health problems experienced by the participants and the type of healthcare providers they often patronized in which a recall period of six (6) months was used. This was adopted from previous published articles [39-43]. The research instrument was pre – tested among 30 household heads in LGAs not selected for the study. This was done after training ten (10) research assistants, to check for feasibility of the study and to familiarize them with the instrument.

Data was cleaned, manually entered and analysed using SPSS statistics version 22. Socio – economic status of the households was assessed using the respondents' age, gender, educational status, occupation and socio – economic status index (SESI). Oyedeki's method was used in the estimation of SESI of households. This was done by using the occupations and educational attainment of household heads and their spouses to obtain five socio-economic classes (Class I to class V) [42]. Social classes I – III were the upper social class while social classes IV – V were the lower social class. Descriptive statistics and Chi-square test were performed to explore associations between socio – demographic characteristics, socio – economic status index (SESI) and utilization of healthcare services (defined as whether they found it difficult in paying for the services utilized at the healthcare facilities). Logistic regression was used to determine the predictors of utilization of healthcare services. All levels of significance were set at  $p < 0.05$  at 95% confidence interval.

## 3. RESULTS

All the 360 questionnaires were filled and returned. The mean age of the respondents was 41.7 years with majority of them being males 294 (81.5%), married 322 (89.4%) and practiced Islam 347 (96.4%). About half 164 (45.6%) of the respondents were civil servants and only 7 (1.9%) were students. Most of the respondents were Hausa by tribe 290 (81.9%) and almost half 157 (43.6%) of the respondents had tertiary education Table 1.

About two – thirds of respondents 230 (63.9%) were resident in the urban area.

Most of the households 221(61.4%) belonged to the upper social class (social class I – III) and 139 (38.6%) belonged to lower social class (social class IV – V).

**Table 1. Socio – demographic characteristics of respondents**

<b>Variables</b>	<b>Frequency (%)</b>
<b>Age in years</b>	
20 – 29	56 (15.6)
30 – 39	109 (30.3)
40 – 49	85 (23.6)
50 – 59	75 (20.8)
60 and above	35 (9.7)
$\bar{X} = 41.7 \pm 12.6$ years	
<b>Gender</b>	
Males	294 (81.7)
Females	66 (18.3)
<b>Area of resident</b>	
Urban	230 (63.9)
Rural	130 (36.1)
<b>Tribe</b>	
Hausa	290 (81.9)
Fulani	35 (9.7)
Yoruba	13 (3.7)
Igbo	3 (0.8)
*Others	19 (5.4)
<b>Marital status</b>	
Married	322 (89.4)
Single	30 (8.3)
Divorced	1 (0.3)
Widow	6 (1.7)
<b>Religion</b>	
Christianity	10 (2.8)
Islam	347 (96.4)
Others (no religion)	2 (0.6)
<b>Educational status of respondents</b>	
None	22 (6.1)
Primary	36 (10.0)
Secondary	91 (25.3)
Tertiary	157 (43.6)
Quranic only	54 (15.0)
<b>Social class of respondents</b>	
Upper Social Class	221 (61.4)
Lower Social Class	139 (38.6)

\*Others – Zuru, Igala, Tiv, Zabarma

Despite having enrolled two-thirds of the respondents from the urban area, majority of the respondents 337 (93.6%) paid for their healthcare through user-fees out – of – pocket payments.

About half 57 (42.9%) of those that were ill suffered from Malaria. This was followed by diarrhea disease and regarding where they sought for treatment, PMDs 264 (27.4%) were the most common providers visited for healthcare followed by teaching hospital 203 (21.0%) while private hospital was least visited Table 2.

### 3.1 Utilization of Healthcare Services

Over half 74 (57.8%) of the respondents that found it difficult paying for the services utilized at the health facilities were in the lower quintiles (Q4 and Q5) and this was statistically significant ( $X^2 = 31.5$ ,  $p < .001$ ). About 76% of the respondents in the upper social class did not find it difficult paying for services utilized at the health facility compared with those in the lower social class and this was statistically significant ( $X^2 = 30.57$ ,  $p = < .001$ ). Over a quarter of those that didn't find it difficult paying for the services utilized at the health facility had secondary education and this was statistically significant ( $X^2 = 32.83$ ,  $p < .001$ ). Half of the respondents that didn't find it difficult paying for the services utilized at the facility were civil servants and this was statistically significant ( $X^2 = 12.01$ ,  $p = .035$ ). About 96% of respondents that did not use user – fees to pay for their healthcare services did not find it difficult in paying for services utilized at the health facility compared with those that used user – fees and this was statistically significant ( $X^2 = 9.94$ ,  $p = .002$ ) Table 3.

Households in the lower social class were 2.2 times the odds to find it difficult in paying for the healthcare services utilized at the health facility and this was statistically significant after controlling for the effects of user – fees status, educational status and occupation of respondents (OR = 2.20,  $p = 0.003$ , 95% CI [1.31 – 3.77]).

Households that paid for their healthcare services with user – fees were 8 times the odds to find it difficult in paying for the healthcare services utilized at the health facility and this was statistically significant after controlling for the effects of social class of households, educational status and occupation of respondents (OR = 8.02,  $p = 0.045$ , 95% CI [1.05 – 61.17]).

Finally, households with informal education were 2.2 times the odds to find it difficult in paying for the services utilized at the health facility and this was statistically significant after controlling for the effects of social class of households, educational status and user – fees status (OR = 2.23,  $p = 0.008$ , 95% CI [1.24 – 4.16]).

### 4. DISCUSSION

Ever-increasing evidence suggests that the health of a population is greatly determined by the social and economic circumstances of that population, as well as its access and

utilization of health care services [44]. An important objective for health care systems is 'equal access for equal needs' [45] and there shouldn't be any barrier to utilization of healthcare services.

This study revealed that a quarter of the respondents visited PMDs for their healthcare; one – tenth visited primary healthcare and only 3.2% visited private hospital. This is not surprising since PMDs are well known for cheap and easy access to healthcare though it's being managed by inexperienced individuals with little or no knowledge of healthcare. This finding is consistent with studies done in South-eastern

Nigeria and in other sub – Saharan African (SSA) countries [34,46].

About half of the respondents visited healthcare providers for Malaria treatment while the least health condition was Meningitis. The fact that malaria was the most common public health problem and disease burden has been found in several other studies in Nigeria [46,47]. This reinforces the importance of tackling malaria due to its potential to deplete household resources. However, it is surprising that despite the enormous amounts of money and other resources that have been invested in malaria control in Nigeria, the disease still remains the

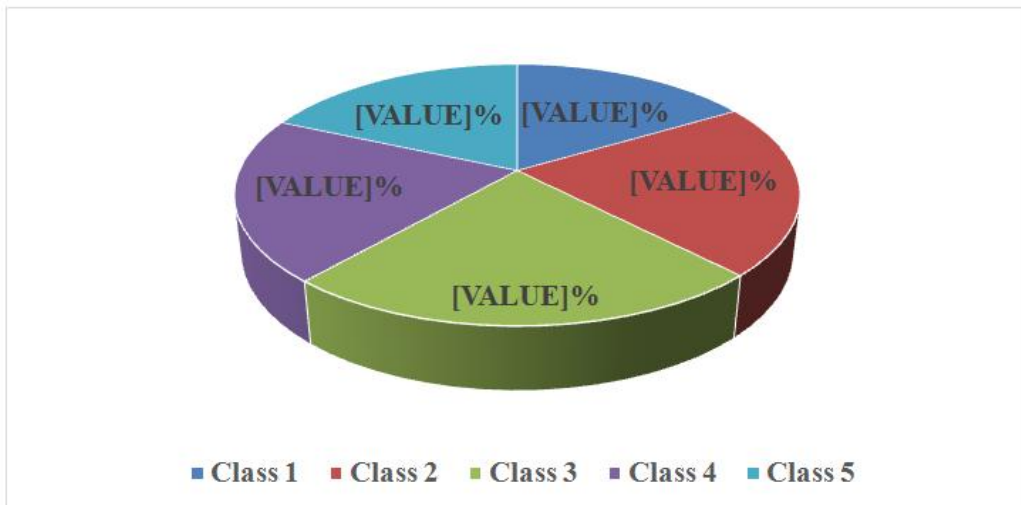


Fig. 1. Socio – economic status index of the households

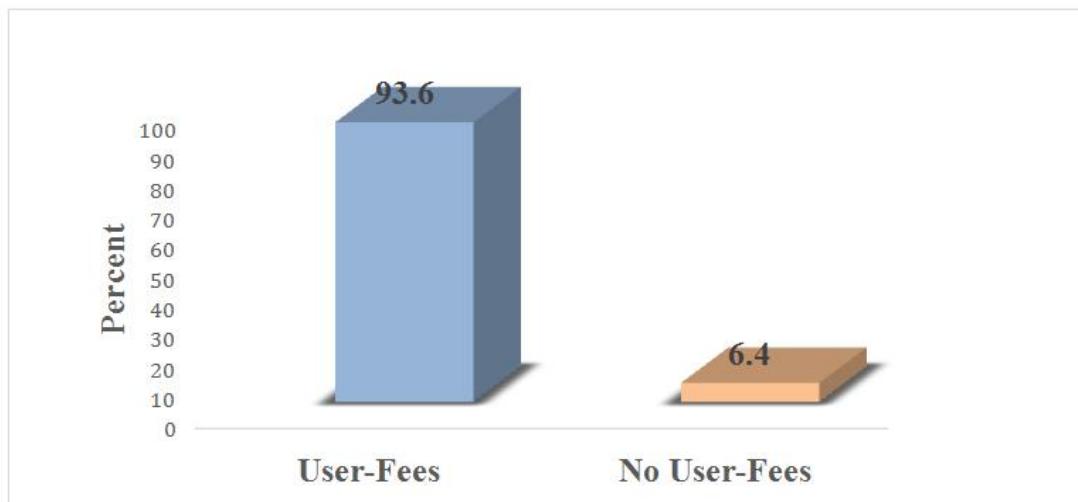


Fig. 2. Pattern of payment for healthcare services

major reason for both outpatient visits and hospital stays. Malaria is endemic in Africa and its occurrence is often associated with dirty environment, blocked drainage (that serve as their breeding sites), fake antimalarial drugs and weak healthcare system to eliminate malaria.

Despite having enrolled two-thirds of the respondents from the urban area, almost all (93.6%) of them paid for their healthcare through user-fees out – of – pocket payments. This is the commonest means for paying for healthcare in Nigeria where people pay for every segment of their care viz. registration, consultation, laboratory test, drugs, in patient care, etc. This is not favourable considering high levels of inflation rate (18.55%), unemployment rate (13.9%) and poverty in the country, as it tends to make individuals and households poorer. The prevalence of user – fees in this study is much higher than the average national OOPS placed at 70% [38] and 69% from a study done among government employees in Abakaliki, Ebonyi state [43], a little higher than 90% reported in a study done in two states (Anambra and Enugu) [48] but similar to 98% reported in Delta state [39]. This indicates the catastrophic effects of user-fees OOPS on the poor people more than the rich. This implies that the poor will be deprived of

utilizing quality healthcare services due to out-of-pocket payment and if they have to, they will need to cut back on other expenses like food, shelter, education etc.

The study further revealed that socio – economic status index and social class of the households, educational status, occupation of respondents and user – fees out – of – payments for healthcare were statistically significantly associated with difficulty in paying for the services utilized at the health facility.

Over half of the respondents that found it difficult paying for the services utilized at the health facility were among the very poor (Q4) and most poor (Q5) groups. The poor find it difficult in paying for their healthcare and hence, denied the utilization of quality healthcare since they have to pay out – of – pocket. Furthermore, the high level of healthcare cost probably deterred many households especially the most poor and rural dwellers from accessing good quality providers. Some authors from meta-analysis also found that user fee was a barrier to access and utilization of healthcare services [49]. Other studies showed that the better-off SES spends more on healthcare [50] due to income effect since they have the ability to pay.

**Table 2. Pattern of out – of – pocket payments for healthcare among respondents**

<b>Variables</b>	<b>Frequency (%)</b>
<b>Types of healthcare providers often patronized</b>	
Patent Medicine Dealers (PMDs)	264 (27.4)
Teaching Hospital	203 (21.0)
Home	151 (15.6)
General Hospital	129 (13.4)
Primary Health Care	112 (11.6)
Traditional care	75 (7.8)
Private Hospital	31 (3.2)
<b>Health problems (common)</b>	
Malaria	57 (42.9)
Diarrhoea disease	13 (9.8)
ANC	10 (7.5)
Hypertension	7 (5.3)
Tuberculosis	1 (.3)
Meningitis	1 (.3)
Others*	44 (33.1)
<b>Modality of payment for healthcare</b>	
Own money	325 (90.5)
Contributions	11 (3.1)
Borrowed money	1 (0.3)
Private Health Insurance Scheme (PHIS)	1 (0.3)
National Health Insurance Scheme (NHIS)	21 (5.8)

\*Other health problems included: Diabetes mellitus, abdominal pain, skin rashes, upper respiratory tract infection (URTI), headache and trauma

**Table 3. Association between socio – economic factors and utilization (difficulty of payment) of healthcare services**

Variables	Do you find it difficult paying for the services utilized at the health facility? (Utilization to healthcare)		Test statistics, p value
	Yes N (%)	No N (%)	
<b>Age of respondents (years)</b>			
< 40	59 (35.8)	106 (64.2)	$X^2 = .001$ $p = .970$ , OR = 1.00
≥ 40	69 (35.6)	125 (64.4)	
<b>Gender of respondents</b>			
Male	108 (36.9)	185 (63.1)	$X^2 = 1.009$ $p = .315$ , OR = 1.34
Female	20 (30.3)	46 (69.7)	
<b>Socio – economic status index</b>			
Q1 – least poor	14 (10.9)	45 (19.5)	$X^2 = 31.518$ $p = .000^{**}$
Q2 – less poor	17 (13.3)	60 (26.0)	
Q3 – poor	23 (18.0)	61 (26.4)	
Q4 – very poor	37 (28.9)	36 (15.0)	
Q5 – most poor	37 (28.9)	29 (12.6)	
<b>Social – class of households</b>			
Upper social class	54 (24.5)	166 (75.5)	$X^2 = 30.565$ , $p = .000^{**}$ , OR = 3.5
Lower social class	74 (53.2)	65 (46.8)	
<b>Marital status of respondents</b>			
Single	10 (7.8)	20 (8.7)	LR = 1.111 $p = .853$
Married	115 (89.8)	206 (89.2)	
Divorced	0 (0.0)	1 (0.4)	
Widowed	3 (2.3)	4 (1.7)	
<b>Tribe of respondents</b>			
Hausa	110 (87.3)	180 (79.3)	$X^2 = 8.070$ $p = .089$
Fulani	11 (8.7)	17 (7.5)	
Yoruba	2 (1.6)	11 (4.8)	
Igbo	0 (0.0)	3 (1.3)	
Others	3 (2.4)	16 (7.0)	
<b>Educational status of respondents</b>			
None	15 (11.7)	7 (3.0)	$X^2 = 32.828$ $p = .000^{**}$
Quranic only	31 (24.2)	22 (9.5)	
Primary	16 (12.5)	20 (8.7)	
Secondary	27 (21.1)	64 (27.7)	
Tertiary	39 (30.5)	22 (9.5)	
<b>Occupation of respondents</b>			
Students	2 (1.6)	5 (2.2)	$X^2 = 12.014$ $p = .035^*$
Unemployed	7 (5.5)	9 (3.9)	
Full time House – wife	9 (7.0)	9 (3.7)	
Farmers	22 (17.2)	19 (8.2)	
Business	42 (32.8)	72 (31.2)	
Civil servants	46 (35.9)	117 (50.6)	
<b>Religion of respondents</b>			
Christianity	5 (3.9)	5 (2.2)	LR = 2.623 $p = .367$ , OR = 1.81
Islam	123 (96.1)	223 (97.0)	
***Others	0 (0.0)	2 (0.9)	
<b>User – fees out – of – pocket payments</b>			
Yes	127 (37.8)	209 (62.2)	$X^2 = 9.939$ $p = .002^*$ , OR = 12.76
No	1 (4.5)	21 (95.5)	

\*  $p < .05$ ; \*\*  $p < .001$ ; \*\*\*Others – neither Christian nor Muslim



**Table 4. Socio – economic predictors of utilization (difficulty of payment) of healthcare services**

Variables	B	p value	OR	95% CI for OR	
				Lower	Upper
Social class (Lower class/Upper class)	0.801	<b>0.003*</b>	2.20	1.31	3.77
User – fees (Yes/No)	2.08	<b>0.045*</b>	8.02	1.05	61.17
<sup>a</sup> Educational status (Informal/Formal)	0.820	<b>0.008*</b>	2.23	1.24	4.16
<sup>b</sup> Occupation of Respondents (Unemployed/Employed)	0.178	0.478	1.12	0.731	1.952

\*p < .05; 'a' – informal education: no education and quranic only; formal education: primary, secondary and tertiary education. 'b' – unemployed: student, housewife, farmer and business; employed: civil servant

Similarly, in the lower social class were 3.5 times the odds of finding it difficult in paying for services utilized at the health facility compared with those in the upper social class. The lower social class are the very poor and most poor groups of individuals, perhaps unemployed as well, hence payment for healthcare with user – fees will be a big barrier to utilization of healthcare services ( $X^2 = 30.56$ ,  $p < .001$ ,  $OR = 3.5$ ).

Over a quarter of those that didn't find it difficult paying for the services utilized at the health facility had secondary education and this was statistically significant. This implies that educated people are more likely to be employed to give them the financial means of paying for healthcare services when compared to the less educated or non – educated ones. Furthermore, educational achievement can be assumed to be associated with an increased awareness of illness, symptoms, and availability of services and its utilization [51]. It also acts as a good proxy of socioeconomic position by enhancing the ability to afford the various costs involved. This finding is similar to earlier studies done in Ghana, Kenya and Tanzania [52-54].

Half of the respondents that didn't find it difficult paying for the services utilized at the facility were civil servants. Civil servants have a means of livelihood and as such they are less likely to find it difficult in paying for their healthcare service. They are also likely to use pre – payment options like NHIS.

Age, gender, marital status, tribe and religion of respondents were not significantly associated with difficulty in paying for the services utilized at the health facility. A probable reason could be a similar pattern of healthcare seeking behaviour

irrespective of these variables, among the population. This is consistent with the finding from a study in the southern Nigeria done in 2015, which revealed that socio-demographic variables such as age, gender and level of education were not statistically associated with utilization of the primary healthcare facility in the community [55].

Social class and user – fees and educational status were the three predictors of utilization of healthcare services at the health facility. Households in the lower social class were 2.2 times the odds to find it difficult in paying for the healthcare services utilized at the health facility and this was statistically significant after controlling for the effects of potential confounders. This finding may have affected utilization rates, as it could have a negative effect on the "quantitative" outcome of households-based utilization of health services, particularly in a country like Nigeria with high disease burden and low income per capita. Inability to pay for health services is therefore a major factor determining utilization of health services. Underutilization of health services especially by the poor and disadvantaged remains a chronic problem in developing countries even though there is a huge unmet need for health care [56].

These findings are supported by other studies that revealed striking inequities in use of the different providers, with the poorer SES groups (lower social class) and the rural dwellers more likely to use low level and informal providers (PMDs, herbalists), where treatment is usually very cheap and of questionable quality [48,57-60].

Households that paid for their healthcare services with user – fees were 8 times the odds

to find it difficult in paying for the services utilized at the health facility and this was statistically significant after controlling for the effects of potential confounders. This implies that there is inequality in utilization between the poor, that mostly use user-fees, and the rich who are more likely to pay through pre-payment mechanisms like National Health Insurance Scheme (NHIS). This finding is consistent with a study done in Delta state, Nigeria that showed that own money, borrowed and contributed funds were associated with difficulty in paying for all the services recommended by the physicians ( $p < 0.05$ ). However, those paying through pre-payment schemes did not show a significant relationship with having difficulty in paying for all the needed services as recommended [39].

A study done in Southeast Nigeria revealed that 35.5% of the respondents did not utilize the healthcare facility because they could not afford the cost of services [25]. The findings in this study are also supported by the results in a study done in Zambia that showed that a statistically significant negative concentration indices for public health post visits, public clinic visits and all public facility visits for the poor (pro-poor) while the concentration index of the rich for public hospital visits is positive and statistically significant at the 5% level [61].

Finally, households with informal education were 2 times the odds to find it difficult in paying for their healthcare services utilized at the health facility and this was statistically significant after controlling for the effects of potential confounders. Educational achievement can be assumed to be associated with an increased awareness of illness, symptoms, and availability of services and its utilization [51]. It also acts as a good proxy of socioeconomic position by enhancing the ability to afford the various costs involved. This finding is similar to earlier studies done in Ghana, Kenya and Tanzania [52-54].

## 5. CONCLUSION

The study has revealed that PMDs are the most frequently visited by respondents and Malaria remains the commonest illness while user – fees out – of – pockets payment was the major mode of paying for healthcare service. The study also revealed that socio – economic factors such as age, gender, marital status, tribe and religion of respondents were not significantly associated with difficulty in paying for the services utilized at the health facility. However, respondents' social

class and payment made through user – fees were the predictors of utilization of healthcare services.

In order to improve the provision and utilization of healthcare services, the government should render free public health services (particularly for common illnesses that includes Malaria) with easy access by people; subsidising healthcare services can be an alternative option or opt for other means of financing healthcare services – NHIS, CBHIS etc. This will reduce the inequities in utilization of healthcare. The establishment of PMDs should be regulated and there should be some restrictions to their services. Furthermore, there is need for creation of more job opportunities to address the unemployment problem in Nigeria. This will improve people's social status and therefore improve their healthcare utilization.

## CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

## ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the authors.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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